

**Amendments to the Specification:**

Please replace the paragraph at page 17 with the following amended paragraph:

**ABSTRACT OF THE DISCLOSURE**

In a method of controlling [[a]] transmitting buffer and [[a]] receiving buffer buffers of a network controller and [[in]] a network controller operating under such a method, at least one request for access to a system bus from the transmitting buffer and the receiving buffer is received, and the occupancy level of data in the receiving buffer and the vacancy level of data in the transmitting buffer are determined. Access to the system bus by the transmitting buffer or the receiving buffer is granted based on the determination result. According to the method and system, buffers Buffers in the transmitting path and buffers in the receiving path paths are treated as a single virtual transmitting buffer and a single virtual receiving virtual buffer, respectively[[],]. and bus Bus priority is determined in consideration of by the data occupancy level of data in each virtual buffer along with and any increase or decrease change in the occupancy level. Therefore, it is possible to effectively prevent or reduce underflow of the transmitting buffer and overflow of the receiving buffer, thereby impartially arbitrating as to which of the transmitting and receiving buffers can access the memory.